CLAIMS

What is claimed is:

1. A method for manufacturing thin film transistor panel, at least, comprises following step:

provide a silicon substrate;

form a of transparent insulator on the front surface of said silicon substrate;

form a plurality of thin film transistor structures and a plurality of corresponding transparent electrodes on said transparent insulator;

bond a transparent substrate onto the front surface of said silicon substrate;

remove said silicon substrate; and

etch said transparent insulator to expose said transparent electrode.

2. A method for manufacturing thin film transistor panel of claim 1, wherein said transparent insulator is SiO_x.

3. A method for manufacturing thin film transistor panel of claim 1, wherein said transparent insulator is SiN_x.

4. A method for manufacturing thin film transistor panel of claim 1, wherein the thickness of said transparent insulator is below one micrometer.

5. A method for manufacturing thin film transistor panel of claim 1, wherein the material of said transparent electrode is indium tin oxide.

6. A method for manufacturing thin film transistor panel of claim 1, wherein said

transparent substrate is glass substrate.

7. A method for manufacturing thin film transistor panel of claim 1, wherein said transparent substrate is polymer substrate.

8. A method for manufacturing thin film transistor panel of claim 1, wherein the method for removing said silicon substrate includes chemical mechanical polishing.

9. A method for manufacturing thin film transistor panel of claim 1, wherein said the method for removing said silicon substrate includes etching process.

10. A method for manufacturing thin film transistor panel of claim 1, further comprises a step for forming alignment mark on said transparent insulator.

11. A method for manufacturing thin film transistor panel of claim 1, further comprises a step for forming a back matrix on said thin film transistor structure before bonding said transparent substrate onto the front surface of said silicon substrate.

12. A method for manufacturing thin film transistor panel of claim 1, wherein the step for forming said thin film transistor structure and said transparent electrode comprises:

form a transistor thin film and a transparent electrode on said transparent insulator;

form a gate insulator covering said transistor thin film and said transparent electrode;

form a gate electrode on said gate insulator corresponding to the position of said transistor thin film;

form an interlayer on said gate electrode and said gate insulator;

form a metal contact layer on said gate insulator; and

form a passivation layer on said metal contact layer.

13. A method for manufacturing thin film transistor panel of claim 12, wherein the material of said transistor thin film can be anyone of the group of polycrystal silicon(p-Si)、polycrstal germanium （p-Ge）、polycrystal silicon germanium（p-SiGe）、crystal silicon （c-Si）、crystal germanium（c-Ge）、crystal silicon germanium （c-SiGe）.

14. A method for manufacturing thin film transistor panel of claim 12, further comprises a step of forming a color filter on said passivation layer.

15. A method for manufacturing thin film transistor panel, at lease, comprise following steps:

provide a silicon substrate;

form a transparent insulator on the front surface of said silicon substrate;

form a plurality of thin film transistor structures on said the transparent insulator;

bond a transparent substrate onto the front surface of said silicon substrate;

remove said silicon substrate; and

form a plurality of transparent electrodes corresponding to said thin film transistor structure on the bottom surface of said transparent insulator.

16. A method for manufacturing thin film transistor panel of claim 15, wherein said transparent insulator is SiO_x.

17. A method for manufacturing thin film transistor panel of claim 15, wherein said transparent insulator is SiN_x.

18. A method for manufacturing thin film transistor panel of claim 15, wherein the thickness of said transparent insulator is below one micrometer.

19. A method for manufacturing thin film transistor panel of claim 15, wherein the material of said transparent electrode is indium tin oxide.

20. A method for manufacturing thin film transistor panel of claim 15, wherein said transparent substrate is glass substrate.

21. A method for manufacturing thin film transistor panel of claim 15, wherein said transparent substrate is polymer substrate.

22. A method for manufacturing thin film transistor panel of claim 15, wherein the method for removing said silicon substrate includes chemical mechanical polishing.

23. A method for manufacturing thin film transistor panel of claim 15, wherein said the method for removing said silicon substrate includes etching process.

24. A method for manufacturing thin film transistor panel of claim 15, further comprises process for forming alignment mark on said transparent insulator.

25. A method for manufacturing thin film transistor panel of claim 15, further comprises process for forming a back matrix on said thin film transistor structure before bonding said transparent substrate onto the front surface of said silicon substrate.

26. A method for manufacturing thin film transistor panel of claim 15, wherein the steps for forming said thin film transistor comprises:

form a transistor thin film on said front surface of said transparent insulator;

form a gate insulator covering said transistor thin film and said transparent electrode;

form a gate electrode on said gate insulator corresponding to the position of said transistor thin film;

form an interlayer on said gate electrode and said gate insulator;

form a metal contact layer on said gate insulator; and

form a passivation layer on said metal contact layer.

27. A method for manufacturing thin film transistor panel of claim 26, wherein the material of said transistor thin film can be anyone from the group of polycrystal silicon (p-Si)、polycrystal germanium (p-Ge)、polycrystal silicon germanium (p-SiGe)、crystal silicon (c-Si)、crystal germanium (c-Ge)、crystal silicon germanium (c-SiGe).

28. A method for manufacturing thin film transistor panel of claim 15, further comprises a step of forming a color filter on the bottom surface of said transparent insulator before forming said transparent electrode.

29. A method for manufacturing thin film transistor panel, at least, comprises following step:

provide a silicon substrate;

bond a transparent substrate onto the back of said silicon substrate;

reduce the thickness of said silicon substrate to form a layer of crystal silicon thin film;

form a plurality of thin film transistor structures on said crystal silicon thin film;

etch said thin film transistor structure layer and said crystal silicon thin film to form suitable pixel via;

form a planarization layer on said thin film transistor structure and said pixel via; and

form a plurality of transparent electrodes corresponding to the thin film transistor structures on said planarization layer.

30. A method for manufacturing thin film transistor panel of claim 29, wherein the thickness of said transparent insulator is below one micrometer.

31. A method for manufacturing thin film transistor panel of claim 29, wherein the material of said transparent electrode is indium tin oxide.

32. A method for manufacturing thin film transistor panel of claim 29, wherein said transparent substrate is glass substrate.

33. A method for manufacturing thin film transistor panel of claim 29, wherein said transparent substrate is polymer substrate.

34. A method for manufacturing thin film transistor panel of claim 29, wherein the method for removing said silicon substrate includes chemical mechanical polishing.

35. A method for manufacturing thin film transistor panel of claim 29, wherein said the method for removing said silicon substrate includes etching process.

36. A method for manufacturing thin film transistor panel of claim 29, wherein the method for forming thin film transistor structure comprise:

form a source region and a drain region on said crystal silicon thin film;

form a gate insulator covering said transistor thin film and said transparent electrode;

form a gate electrode on said gate insulator;

form a interlayer on said gate electrode and said gate insulator; and

form a metal contact layer on said gate insulator.

37. A method for manufacturing thin film transistor panel of claim 29, wherein the planarization layer is also color filter.